

# CHAPTER 9 - Project Initiation

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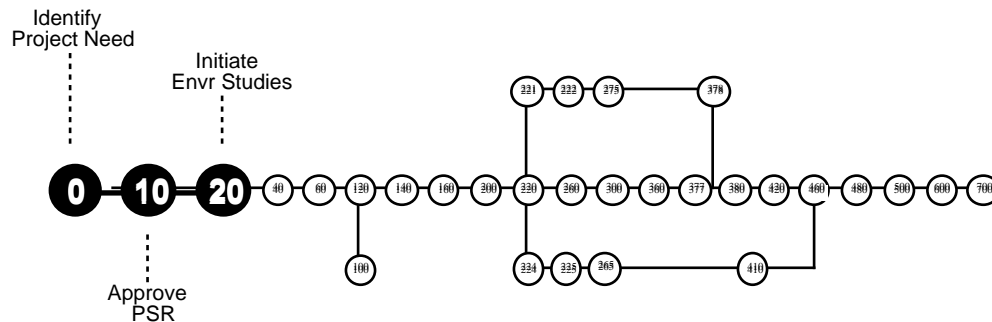
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## CHAPTER 9 - Project Initiation



This chapter discusses the project development workflow tasks between Milestones 000 and 020. For details on these tasks, refer to the *Project Development Workflow Tasks Manual*.

## ARTICLE 1 - General

### Project Initiation Document

A project initiation document is required for all major projects prior to their being programmed in a State or local programming document.

### Project Initiation Process

Project initiation is a pre-programming phase of project development that is used to obtain management approval of candidate STIP, Toll Bridge, TSM Plan or SHOPP projects or concept approval of projects 100% funded by others. The outcome of the project initiation process is a well-defined, proposed project scope tied to a reliable cost estimate and schedule, suitable for programming or local commitment and for proceeding to the environmental evaluation and project alternative selection phase.

### Project Study Report

The Project Study Report (PSR) is the most common document for this purpose and is required by statute for any capacity increasing project prior to its inclusion in the STIP. (See Article 3 and Appendix L.)

A PSR or equivalent project initiation document is required by policy for any other major project prior to programming. Appendices A-Q contain guidelines for all the project initiation documents described in this chapter.

## Other Project Initiation Documents

The other project initiation documents that initiate projects in various specialized programs or situations are all discussed in Articles 4 through 17. These other documents include the following:

- Facility Project Study Report (Facility PSR)  
(See Article 4 and Appendix C.)

Lands, buildings and facilities  
(HA11, HA12, HA13 and HA14) projects

- Project Scope Summary Reports (PSSR) - 5 types
  - Pavement Rehabilitation (HA22) projects  
(See Article 5 and Appendix G.)
  - Capital Outlay Preventive Maintenance (HA22) projects  
(See Article 16 and Appendix H.)
  - Structure Rehabilitation (HA21) projects  
(See Article 5 and Appendix P.)
  - Seismic Retrofit (HA4S ) projects  
(See Article 8 and Appendix N.)
  - Urban Freeway Access (HA28) projects  
(See Article 11 and Appendix Q.)

- Site Damage Report (SDR)  
(See Article 6 and Appendix O.)

Major Damage Restoration (HA23) projects

- Noise Barrier Scope Summary Reports (NBSSR)  
(See Article 9 and Appendix F.)

Retrofit Noise Barrier (HB311 & 312) projects

- PSR Data Sheets – 2 types  
(See Article 7 and Appendix E.)
  - Highway Planting (HB32) projects
  - Highway Planting Restoration (HA25) projects

- Project Information Report (PIR)  
(See Article 10 and Appendix J.)

TSM projects (HB4N, HB5, HB6)

- Permit Engineering Evaluation Report (PEER)  
(See Article 13 and Appendix I.)

Locally funded projects costing under \$1,000,000 and done under the encroachment permit process

- Combined PSR/PR  
(See Article 12 and Appendix A.)

Locally funded projects costing over \$1,000,000, provided they meet the criteria defined in Article 11.

The following are project initiation documents for projects that do not require programming or local funding:

- Project Report  
(See Article 17 and Appendices K, D or M.)

"Minor A" projects

- EA Project Report  
(See Article 15 and Appendix B.)

- "Minor B" projects
- Maintenance (HM) projects

- Director's Order  
(See Article 14.)

Urgent Projects

## **Project Initiation Document Links System Planning to Programming**

A PSR, and any other equivalent project initiation document, is a report that documents agreement on the design concept, design scope, schedule and estimated cost of a project so that the project can be included in a future programming document. The individual in responsible charge, a registered engineer if it is an engineering report, or an individual of another profession if it is not, signs the report and applies the appropriate stamp or seal.

The PSR translates broad improvement planning concepts and planning scopes developed in the system planning process into project level detail. Section 65086 (a) of the Government Code specifies that Caltrans shall carry out long-term State highway

system planning to identify future highway improvements and new transportation corridors.

Projects are identified in local and regional planning documents, in particular the Regional Transportation Plan (RTP). The PSR or equivalent document should include information from these products as appropriate.

The PSR is the key point of linkage between Caltrans' System Planning activity and programming. Therefore, preparation of the PSR begins with a review of the Route Concept Report (RCR) and the District System Management Plan (DSMP) and includes information from these products as appropriate. In rural areas, the Interregional Road System Plan (IRRS) must also be reviewed.

In addition, the various management systems identify problems on the existing highway system. Project initiation documents for projects identified through one of the management systems should discuss the information pertaining to the project available from that management system.

These various planning documents are discussed in Chapter 1, Section 3, of this manual.

The CTC and Caltrans are required to program, budget and expend the funds in the State Highway Account in the State Transportation Fund in accordance with long-range RTPs and a specified sequence of priorities. The PSR, or equivalent project initiation report, documents the plans and priorities that lead to the development of the various State and local programming documents that are discussed in Chapter 4 of this manual.

## **Regional Preparation Priorities**

Sections 65086.4 and 65086.5 of the Government Code, enacted in Chapter 715 of the Statutes of 1990 (AB 2038), permits the Regional Transportation Improvement Program (RTIP) to include a future list of capacity-increasing State Highway projects in priority order for PSR preparation. The statute requires the list to be submitted to Caltrans. Caltrans may be requested to prepare the PSR for any capacity-increasing project. The requesting entity may prepare the PSR if Caltrans determines that it cannot complete the PSR in a timely fashion.

## **Regional and Local Involvement**

Caltrans is required to seek assistance from regional and local transportation agencies or other entities for the preparation of PSRs for projects contained in the regional priority list. This action is required when the PSR cannot be completed so as to allow a project to be eligible for inclusion in the upcoming STIP.

## **District Director Authority**

District Directors have discretion in selecting candidate projects for study. The DSMP contains the identification and the priority of the top group of New Highway Construction and Traffic Safety Improvement projects that are candidates for programming.



## **When is a PSR (or Equivalent) Required?**

According to statute, the CTC may include a highway capacity-increasing project in the STIP only if a PSR has been completed for that project.

The "Guidelines for the Preparation of Project Study Reports" were adopted by the CTC on September 12, 1991 to satisfy the requirements of Government Code Section 65086.5 (d), relating to highway capacity-increasing projects. However, Caltrans and CTC policy requires preparation of a PSR or equivalent project initiation document for all major project proposals (not just capacity increasing projects) prior to their programming in any programming document (including the STIP, the SHOPP, the TSM and the Toll Bridge Program), or prior to approving the project concept for any local programming.

"Minor A", "Minor B", and Maintenance projects are exempt from the PSR requirement since they are not programmed. The Project Report (PR) is used as the project initiation document for these projects; if the project is very simple, an EA Project Report may be used instead. Minor projects are defined as projects having a cost at time of construction less than the amount set by the CTC as the limit for minor projects. Projects originally conceived as minor projects that have increased in cost to over the limit for minor projects are not automatically recycled. They may increase in cost to the amount set by the CTC as allowable for minor projects at the time of advertisement. Minor projects are defined by the CTC in terms of State (including federal) funds used, despite the amount of local funding involved. The "Minor B" level is set by the Director of Caltrans. Consult the District Programming Unit or the PD Coordinator for the current limit amounts.

## **K Phase EA**

The costs of PSR preparation should be charged to K phase Expenditure Authorizations. The K phase is used until the project is programmed, or for locally funded projects until a Cooperative Agreement is executed spelling out the respective roles and responsibilities of the State and the local agency. See Chapter 8, Section 2, for a discussion of accounting charging practices.

## **Major Project Start**

Authorization to begin the project development process on a major project is its inclusion in the appropriate programming document or approval of a PSR that specifically authorizes commencing the process.

## **Minor Project Start**

Authority to begin the project development process on minor projects rests with the District Director, subject to the guidelines contained in the *Project Candidate List Development Manual*, administered by the various Headquarters Program Advisors. There is no specific authorizing document required; however, district authorizing procedures should be followed.

## **Ceasing Work on Projects**

Procedures for ceasing work on projects in a programming document are described in Article 19 of this chapter.

# **ARTICLE 2 - Purpose of Project Initiation Documents**

## **General**

Project initiation was adopted to process projects that are systematically identified and scoped at the earliest opportunity, and prior to programming. Realistic preliminary information is obtained so that management can be confident of the design concept and design scope before the project's inclusion in the programming documents. Much preliminary information comes from the system planning process.

The project development process usually begins after feasibility concept studies have determined that a project proposal should be investigated in a PSR or equivalent process. The project initiation document starts the process leading to programming.

## **Design Concept**

The design concept at the Project initiation stage for a highway project is an update of the Planning Concept developed in the System Planning Stage and identifies the type of highway project; e.g., freeway, expressway, conventional highway or mixed highway rail and transit facility.

## **Design Scope**

The design scope includes such items as number of lanes, location and length of project, and high-occupancy vehicle (HOV) lanes, as well as right of way requirements, modernization of features, pavement rehabilitation, landscaping requirements, ramp meters, seismic retrofit, etc. Basic design features include such items as interchange locations, signalization, design standards, etc.

## **Objective**

The objective of a project initiation document is to clearly define the design concept and design scope of the most likely project alternatives and to tie them to realistic cost estimates and schedules so that an alternative selected for programming or local commitment has a high probability of standing up throughout the project development process as a commitment in terms of scope, cost and schedule. It is essential that all work incidental to the project be included in the scope and cost estimates, such as safety elements and upgrades, mitigation, rehabilitation of existing, etc.

The districts are not authorized to approve any project initiation document prior to obtaining approval of any identified exceptions to design standards. It is understood, however, that a project's scope may change as environmental or other studies are made. The project initiation document should fully document the basis of the costs and schedules used for programming or for local commitment. Where alternatives with different costs and schedules are still under study, recommendations for programming or for local commitment should generally be based on what appears to be the highest cost likely alternative, and should never be based on unlikely low cost alternatives. Likewise, schedules should be based on likely assumptions, not on optimistic or unrealistic assumptions.

The project initiation process is intended to perform two distinct purposes:

- Obtain management approval of candidate projects
- Obtain conceptual approval of Special Funded Projects

These purposes are described in detail in the remainder of this Article.

### **Management Approval of Candidate Projects**

One objective of the project initiation process, especially when the standard PSR is required, is to improve the efficiency of project delivery by establishing a procedure that translates broad improvement concepts into programmable projects by identifying a range of alternatives, estimated costs, priority, and schedule before a project is included in a programming document. It is Caltrans' policy to have all major projects on the annual Priority Lists of the various programs covered by a PSR or an equivalent project initiation document. The intent of this policy is to program projects with a well defined scope, estimated cost, and delivery schedule.

The project initiation process provides procedures for obtaining management approval of candidate projects and for initiating project development on projects that require project planning beyond the programming period or prior to programming.

#### **Management Approval With Standard PSR**

The standard PSR is used to obtain management approval of candidate project proposals prior to programming for all capacity increasing projects and for a project in any program which does not provide a specialized project initiation document. The standard PSR is also used to obtain management approval to begin the project planning work following the PSR up through project approval when the length of time needed for project development exceeds the cycle of a programming document.

### **Management Approval With Other Project Initiation Documents**

Management approval for projects in certain programs is obtained by using a specialized project initiation report or by using a Combined PSR/PR.

### **Initiation Prior To Programming**

Management approval to initiate project development on a major project prior to its inclusion in the appropriate programming document is obtained by approval of a PSR that specifically recommends early project development work prior to programming. PSSRs and other equivalent project initiation documents also can provide such approval for SHOPP projects. Occasionally, there are situations where there has been a rapid and unanticipated change in operating conditions since issuance of the last programming document. Examples include pavement rehabilitation, non-emergency slide or slip-out repair, toll bridge projects, traffic safety projects, bridge structural repair or replacement, etc. Prior to preparing a PSR or equivalent document, the district should consult with the appropriate Headquarters Program Advisor to reach agreement that the proposal merits early consideration and funding appears likely.

### **Scope of Candidate Projects**

The initial scoping document for projects is very important in terms of project management and delivery. The PSR, or equivalent, is used to make programming decisions. The project descriptions, estimates, and schedules outlined in the PSR become Caltrans' delivery commitment once a project is programmed.

During the competition for programming, the combined cost for all candidate projects is often twice the funds available. In some cases, where projects address recognized needs, but are too large to clear some of the programming obstacles, a downscoped, more fundable candidate is a more pragmatic proposal than the ultimately desired project.

### **PSR Formulation Strategies**

#### **Minimum Project Alternative:**

All State documents need to include a "minimum project alternative". District Program Management should work with the Project Manager to establish a realistic funding expectation. The Project Manager should develop an alternative project that fits those constraints and will address the most severe problems outlined in the project justification.

The minimum project alternative must stand alone and not depend on successive projects. The minimum project alternative need not contribute to the ultimate project and must not constitute a commitment to the ultimate project. A good illustration would be a corridor with an expressway as the ultimate project — where significant interim relief could be achieved with strategically located passing lanes. Another example would be a desired interchange on an expressway where interim improvement could be achieved by intersection signalization.

### Stageable Alternatives:

Special emphasis should be placed on development of alternatives with staging characteristics. By developing alternatives with components of varying priorities, it is possible to stage the ultimate project or scale it back. The flexibility to quickly and logically adjust the scope of projects is most important at initial programming, but is necessary throughout the project development process.

Districts have a higher probability of getting a project programmed and of meeting at least some of their needs if the PSR includes stageable alternatives. Projects that may be rejected on an "all or nothing" basis are more likely to be completed over a period of years if packaged in more reasonably sized increments. A good project for such an approach would be a rehabilitation project proposed for a long corridor. To be competitive, large projects should be packaged into a series of reasonably sized projects with independent utility, each of which has a separate priority rating backed up by individual Priority Rating Sheets.

During the project development process, when estimated costs exceed programmed dollars, cost increases must be requested through the Cost/Scope/Schedule Management Process. The first question asked is — What can be constructed with the programmed dollars? The project documents (PSR, PSSR, NBSSR, etc.) need to provide the information required to address this question.

## **Conceptual Approval of Special Funded Projects**

The project initiation process provides procedures for obtaining conceptual approval of Special Funded Projects (See Chapter 2, Section 5, of the PDPM, as well as the *Special Funded Projects Manual*). Special funded projects may encompass many types of highway improvements.

For those projects proposed for funding with sales tax measure funds, some information will generally be provided by the district to the proponents of the tax measure for their use in preparing the informational material for the voters. Ideally, this would be a PSR or a PR, but in most instances it may be much less detailed. The PSR, or a revised PSR, is the document that brings together those preliminary concepts and the current engineering and fiscal constraints into a programmable project.

The PSR or revised PSR for sales tax measure projects includes the same information as any other PSR, but also requires the following-additional information:

- Date of approval of tax measure.
- Description of the project as shown on the ballot or in other voter information, when projects are identified.

- Estimated resources needed by project (1) sponsor, (2) consultants, and (3) Caltrans to support project development and oversight activities.
- Breakdown of funding for the project, i.e. sales-tax, SLTPP, local Federal-aid, developer fees, assessment district, etc.

### **Management Approval With Other Project Initiation Documents**

Management approval for projects meeting certain criteria is obtained by using a Combined PSR/PR, a single document that covers both PSR and Project Report (PR) concerns.

### **Early Confirmation Required**

For a proposed new connection to an expressway (controlled access highway) and prior to making commitments to the requesting party, early written confirmation of the concept is given by the District Director. Early written confirmation is given only after consideration of access control policy and engineering aspects such as connection spacing, fit with local general plans and the feasibility of potential ultimate conversion of the State highway into a full freeway. A request for a proposed new public road connection to an expressway (controlled access highway) is made by submitting a PSR - New Connection or a local agency Project Report to the District Director for approval. (See Chapter 27)

### **Cooperative Agreements Required**

The approved PSR is used to determine and obtain initial agreements with the local jurisdiction on feasibility, concept, estimates, staging, limits, environmental considerations, and schedules. These initial agreements must be documented in a Cooperative Agreement that should be prepared concurrently with the PSR. The agreement will indicate that any deviations from the basic design features shown in the approved PSR shall be concurred with by the funding sponsor and by Caltrans.

See Chapter 2, Section 5, and Chapter 16 of this manual, as well as the *Cooperative Agreement Manual* for additional information on Cooperative Agreements and Cooperative Agreement Reports.

### **Programming Listings**

Special funded State highway projects are not placed in State programming documents when they are financed entirely with Sales Tax Measure revenues, other local non-sales tax funds, private funds, or with a combination of local and private funds. However, a list of such projects is prepared annually by Caltrans for the CTC to permit coordination with other highway improvements. The list of projects includes all projects with an approved PSR and a substantial local commitment to provide funds and those projects included in a Sales Tax Measure Strategic Plan.

## ARTICLE 3 - Project Study Report

### CTC-Adopted PSR Guidelines

The "Guidelines for the Preparation of Project Study Reports" (CTC Guidelines) adopted by the CTC on September 12, 1991 prescribe the standard project initiation process. Refer to Appendix L of this manual for a complete copy of these guidelines, including the PSR outline.

### Advisory

Note that the CTC Guidelines in Appendix L are not entirely current. There are several differences between the CTC Guidelines and the current procedures described in this manual due to changes in laws, regulations, policies and procedures. The differences are as follows:

- Government Code Sections 14529.12 and 14529.13, referred to on page 1 of the CTC Guidelines, are no longer in effect. The current Caltrans policy is stated in Chapter 2, Section 5. That section also contains discussions on staffing responsibilities, and on special care in identification of right of way, for special funded projects.
- The CTC Guidelines state that a PSR is used for projects that are capacity increasing (see page 3 of the CTC Guidelines); however, PSRs are also used for projects that are not capacity increasing. PSRs are also to be prepared for state and regional project candidates and special funded project proposals in the following programs:
  - Bridge Replacement Projects that are located on entirely new alignments
  - Urban Freeway Median Barrier Retrofit Projects
  - Protective Betterments Projects
  - Safety Improvements Projects
  - Safety Roadside Rest Projects
  - Vista Point Projects
  - Traffic Operational Improvements that are not proposed for the TSM Plan
  - HOV Projects that are not proposed for the TSM Plan
  - New Curb Ramp (ADA) Projects
  - Park and Ride Lot Modification (ADA) Projects
  - New Highway Construction

– Major Toll Bridge New Construction

PSRs are not prepared for "Minor A" or Minor B" projects.

- The current composition of the Project Development Team differs from the description on page 6 of the CTC Guidelines. For current information, refer to Chapter 8, Section 4.
- The term "Value Analysis" is currently used in place of the term "Value Engineering" used on page 8 of the CTC Guidelines.
- Hazardous waste problems, or potential problems, must be discussed in the PSR, along with a recommended action for avoiding or mitigating the hazardous waste site. This is discussed in Chapter 18, Article 2.
- Measurements are to be expressed in metric units.
- The Fact Sheet for exceptions to mandatory design standards listed on page 12 of the CTC Guidelines has been replaced by the Design Exceptions Fact Sheet exhibits found in Appendix BB.
- The recommendation for a project alternative for programming is no longer presented by memo as described on pages 12 and 13 of the CTC Guidelines. It is now included in the PSR.
- A "Recommendations" section is now included in the PSR. This item does not appear in the outline on page 17 of the CTC Guidelines.
- The wording for the registered civil engineer's statement on page 19 of the CTC Guidelines has since been revised. The current wording is:

"This Project Study Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based."
- The Cost Estimating Guidelines (CTC Guidelines pages 20-26) have been replaced by new guidelines found in Appendix AA.
- The requirement for a "Minimum Project Alternative" is not in the CTC Guidelines' PSR outline. This is described in Chapter 9, Article 2.
- The requirement for "Staging" is not in the CTC Guidelines' PSR outline. This is described in Chapter 9, Article 2.



- The requirements pertaining to existing pavement considerations on widening projects are not in the CTC Guidelines' PSR outline. This is described in Chapter 8, Section 7.
- The requirements pertaining to a formal safety review are not in the CTC Guidelines. This is described in Chapter 8, Section 7.
- The term "environmental clearance" is no longer used as on pages 9 and 18 of the CTC Guidelines. Use the appropriate term depending on the context. In this context use "environmental document" or "environmental processing type".
- The CTC Guidelines do not contain the discussion on Community Involvement Plans contained in Chapter 22, Article 4.
- The discussion on PSR considerations for Special Funded Projects, concerning concept approval and staffing responsibilities, is not covered in the CTC Guidelines. This is described in Chapter 2, Section 5.
- The level of Federal involvement in the stewardship of the project (i.e. Exempt, Certification Acceptance or Project by Project) is now included in the PSR but is not in the CTC Guidelines' PSR outline. This is described in Chapter 2, Section 7.
- The use of the PSR - New Connection, when a new public road connection to an expressway is proposed, is the means used to obtain early confirmation. Details are described in Chapter 27, Article 2.
- The NEPA/404 MOU requires that the costs of avoiding, minimizing, and compensating impacts to waters of the U.S. and associated sensitive species be included in the project cost of the practicable alternatives evaluated. Refer to Chapter 1, Section 4.
- The items that specifically need to be addressed in PSRs that propose new or revised interchanges are described in Chapter 27, Article 5. Also in that Article is the requirement to submit the unapproved PSR to FHWA for conceptual approval if a new or revised interchange is proposed on the Interstate System.
- The Division of State and Local Project Development referred to on page 4 of the CTC Guidelines is now known as the Design and Local Program.

- The Office of Project Planning and Design (OPPD), referred to on pages 11 and 20 of the CTC Guidelines, has been eliminated, although its former duties still exist within the Design and Local Program (DLP), which should now be referred to instead of OPPD.
- The Traffic Management Plan, referred to on pages 9 and 18 of the CTC Guidelines, is now called the Transportation Management Plan.
- SB 1565 of 1994 and the Caltrans Action Request dated September 20, 1995 require that support budgets be established for major state highway projects. Estimated PY effort and other support costs of project development and construction from the time the project is initially programmed through the final stages of construction should be included in the PSR. The proposed schedule should be based upon when the District realistically expects that the project would be programmed, typically in the last two years of the program. This information is not required for Minor projects.

The cost of any specialty contracts or other atypical direct project costs which may be required for the project should be estimated by the proposed fiscal year. Costs for PY estimates should not be included. The Project Management Program (PMP) will establish average dollar costs per PY for various functions, including salary, benefits, CADD usage, travel and other direct costs. Once a project is about to be programmed, these rates will be applied to the estimated PY effort by PMP to establish the project's support budget.

The following table is an example of how project support cost estimates should be incorporated in the PSR under item 9 of the PSR Outline. Do not include the support costs in the Preliminary Project Cost Estimate Summary.

**Project Support (Prelim., Envir., Design, R/W, Struc., Constr.)**

Proposed Program FY	District PY'S		Engineering Service Center PY'S					FY Total PY'S	Other Costs (\$)
			Structures		METs and Others		Office Engr		
	Design	Constr	Design	Constr	Design	Constr			
TOTAL ESTIMATED PROJECT PY'S AND OTHER SUPPORT COSTS:								PY'S	\$*

\* Note: Dollar value of estimated specialty contracts, etc. to be shown only when applicable.

**Submittal to Design and Local Program**

After approval, two copies of the final document should be forwarded to DLP, Attention: Project Study Report.

## ARTICLE 4 - Facility PSR for Lands, Buildings, and Facilities Improvements

### HA1 Program Process

Project development for projects in the Lands, Buildings, and Facilities Improvement (HA1) component of the Highway Capital Outlay Program is described in Chapter 32.

### Office Buildings

New HA13 office buildings and annexes follow a specialized approval process. Refer to Chapter 32.

### Facility PSR

Candidates for programming in the HA1 Program require a Facility Project Study Report (Facility PSR). The Facility PSR is written by the district, but Headquarters Program Advisor(s) and the architects [Either the Office of Structure Design (OSD), or the Division of the State Architect (DSA) in the Department of General Services] play major roles in defining project scope and cost estimates. Field reviews are required before the draft Facility PSR is finalized for the District Director's approval.

### Format for the Facility PSR

The format for the Facility PSR is included in the *Project Candidate List Development Manual* and, along with a preparation guideline, is included in Appendix C of this manual. Facility PSR composition for HA12 projects is described in detail in the *Maintenance Station Design Manual* published by OSD. These guidelines provide a helpful reference for all projects.

### Defines Project Cost and Scope

The Facility PSR, like any other PSR, defines the cost and scope which will become delivery commitments once a project is programmed. The Facility PSR includes information on staffing, equipment and asset management in addition to project specifics included in other PSRs. The Facility PSR represents a consensus of the district, the Headquarters Program Advisor and the architect on the ultimate scope of the candidate project, on how much the project should cost and on the earliest date the project could be delivered if programmed.

### Field Reviews

Field reviews are held to reach consensus on proposed project scope. Before final approvals are sought in the district, the Draft Facilities PSR should be reviewed by

interested groups in the district, in headquarters and other agencies or governments if necessary. The purpose is to resolve conflicts and omissions before any firm commitments are made.

The process required for Equipment Shop and Maintenance Station projects is a good example. A review team meets on the proposed site to review and critique the Draft Facilities PSR. The team includes the following representatives:

- District HA11 or HA12 Coordinator
- District Underground Tank Coordinator or Hazardous Materials Coordinator
- Appropriate District Equipment or Maintenance Superintendents
- District Environmental representative
- District Right of Way representative
- District Asset Management representative
- An Equipment or Maintenance Superintendent from another District
- Office of Structure Design
- Headquarters Maintenance Program Advisor
- Headquarters Programming Program Manager

The Review team evaluates the project proposal and alternatives and makes comments and recommendations.

### **Feasibility / Alternative Planning Study**

OSD will prepare a Feasibility/Alternative Planning Study to compare alternative sites or feasibility of new or existing sites if the project involves major rehabilitation, relocation or new structures. Conceptual studies may also be required after the initial field review.

### **Deviation from Standards**

If the Facility PSR proposes a deviation from standard design, consensus on the deviation must be achieved by members of the Review Team, with concurrence from the headquarters Program Advisor before it is submitted to the District Director. Any deviation from standards are to be listed in the Review Team notes and attached to the Facility PSR before approval of the Facility PSR by the District Director.

## ARTICLE 5 - PSSR for Structure Rehabilitation and Pavement Rehabilitation Projects

### **PSSRs**

Project Scope Summary Reports (PSSRs) are used to define project scope and cost and to approve resurfacing, restoration, and rehabilitation (RRR) work proposed as structure (HA21) and pavement (HA22) rehabilitation projects. The PSSRs are used to select candidate projects for the State Highway Operation and Protection Program (SHOPP). For more information on the SHOPP, see Chapter 4 of this manual.

The PSSR combines the PSR and PR requirements in one report. It must include either the properly signed Categorical Exemption/Categorical Exclusion (if required) or a Final environmental document to meet PR requirements. If exceptions to Mandatory Design Standards are required, a Fact Sheet must be completed and referenced in the PSSR. A summary of the specific exceptions should also be included in the PSSR.

### **Formats for PSSR**

Appendices G and P show PSSR formats for pavement rehabilitation (HA22) projects and structure rehabilitation (HA21) projects.

### **Primary Purpose of RRR Projects**

The primary purpose of a Resurfacing, Restoration, and Rehabilitation (RRR) project is to preserve the investment in the existing pavement structural section or structure by returning it to a maintainable state.

Secondary benefits are an extension of its service life and enhancement of highway safety. RRR projects generally do not increase the level of service of the existing highway.

RRR projects, by their purpose and definition, reflect and emphasize the economic management of the existing highway system to protect the investment in it and to derive the maximum economic benefit from it. Economic considerations are a major factor in determining the priority and scope of RRR projects.

Safety enhancement of the facility by implementing cost-effective safety improvements is an essential consideration on a RRR project. The fact that there is a RRR project being designed provides an opportunity to do safety-related upgrading. Certain upgradings for safety and operational purposes are necessary and others are desirable. RRR projects are developed in a manner that considers both the necessary and the desirable safety upgradings. Necessary safety upgrades are included in RRR projects while desirable safety upgrades may be included as appropriate (if a desirable safety upgrade can be made at a reasonable cost).

Special emphasis should be placed on implementing cost-effective solutions for safety upgrades. When upgrading of geometric features for safety or operational improvements becomes a major factor in project costs or impacts, the project becomes "reconstruction" (the fourth R).

## **Project Selection**

Preliminary project field reviews should be performed by the district. The District HA21 and HA22 Program Coordinators will then select projects for the candidate list and initiate PSSRs in conformance with the *Project Candidate List Development Manual*.

The District Design Unit, with assistance from the Maintenance Unit, should jointly do the scoping and estimating for the selected projects. The Engineering Service Center (ESC) Project Functional Manager provides assistance for proposed structure rehabilitation.

When the PSSR process is initiated, a K-phase Expenditure Authorization should be secured in the same manner as PSRs.

## **Design Considerations**

The *Highway Design Manual* and *Design Information Bulletin, Number 79* - "RRR Design Criteria" should be consulted for a discussion of geometric design considerations for RRR projects.

## **Project Scoping**

The physical characteristics of a highway and its general location often determine what improvements are necessary, desirable, possible, practical, and cost effective. Topography, climate, adjacent development, existing horizontal and vertical alignment, cross section, and similar characteristics should be considered in determining the scope of geometric or safety improvements to be made in conjunction with RRR work.

In addition, the existing pavement condition and the scope of needed pavement improvements dictate to a large extent what improvements are feasible, prudent, or practical. More significant geometric upgrading might be appropriate if the pavement improvements are substantial, but may not be appropriate or economical if the needed pavement improvements are relatively minor.

Conversely, the existing geometric condition and the scope of needed geometric improvements often influence the scope of pavement improvements. The geometric deficiencies may be so severe that the overall highway improvements must be more substantial in order to facilitate the necessary geometric improvements. A point may be reached, however, where even with substantial geometric deficiencies, the economic and environmental constraints preclude making the improvements indicated by the criteria presented in this section. A judgment decision must then be made as to whether the need for the project requires proceeding with less than desirable rehabilitation efforts. These cases will require justification and approval in the PSSR.

**Field Reviews & Documentation**

It is necessary to field review all RRR projects. RRR projects are usually difficult to scope and to obtain accurate design information, unless the project is field reviewed. All project field reviews should be documented since the project development process usually takes a period of years to complete and project personnel change. Decisions and agreements made during the early phases of the process need to be documented and retained in the project files for future reference and for updating when the final design is determined. Field reviews of all RRR projects are needed so that reliable cost estimates can be developed early in the project development process.

**Reliable Project Scope and Cost Estimates**

To minimize future cost increases, a thorough scoping of projects and reliable project cost estimates are needed. Reliable project cost estimates are extremely important at every stage in the project development process. Inaccurate estimates result in problems in Caltrans' programming and budgeting. The final concept, scope, and cost of each project must be established as early as possible. Initial estimates made for RRR projects should be based on the results of field reviews and include all anticipated work (e.g., safety, restoration, hardware modification, etc.).

**District Environmental and Right of Way Involvement**

The scope of the geometric improvements proposed for an RRR project is often influenced by potential impacts on the surrounding land and development. This is especially true for non-freeway RRR projects. Social, environmental, and economic impacts may influence the scope of a RRR project. This is particularly true where existing right of way is narrow and adjacent development is extensive. Complex projects may require extensive involvement of the District Right of Way Branch and Environmental Unit. They should become involved in such projects as early as possible in the project development process. Their early involvement should help to avoid potential delays in project delivery and minimize potential changes in project scope which may result in project cost increases.

**Safety Considerations**

RRR projects preserve and extend the service life of existing highways and also enhance safety. Therefore, RRR projects may include such items as placement of additional surface material and/or other work necessary to return an existing roadway, including shoulders, bridges, roadside, and appurtenances to a condition of structural and functional adequacy. RRR projects may also include reworking or strengthening of base materials and upgrading of geometric features and appurtenances for safety purposes.

**Traffic Data**

Traffic data is needed in the design of all highway projects, including RRR projects. It is an important consideration in the determination of the appropriate level of improvement (e.g., reconstruction vs. RRR) and in the selection of various geometric elements. For RRR, the need for a formal forecast of future traffic is greatest when the current traffic is

approaching the capacity of the highway, and decisions must be made regarding the timing of a major improvement such as additional lanes. RRR projects should normally be designed on the basis of current average daily traffic (ADT) and current peak period design hourly volume (DHV) to extend the structural section service life for at least 10 years. On very low volume roads, where even high percentage increases in traffic do not significantly impact design decisions, studies to predict future traffic are not normally necessary.

### **Deflection Studies**

Deflection studies are required as part of the AC (flexible) pavement rehabilitation design procedure and must be completed prior to the scoping team's field review for all AC pavement rehabilitation projects triggered by structural distress. For proper project scoping and cost estimating purposes, the deflection study should be no older than one and one-half years.

Deflection studies should be scheduled through the District Materials Unit. This Unit will then coordinate the required testing with the Pavement Consulting Services Branch, of the Office of Materials Engineering and Testing Services (METS), of the Engineering Service Center (ESC). Early submittals are encouraged since testing may take as long as four to six months to accomplish, depending on the availability of test equipment and time of year. Near the end of the fiscal year (June 30) many projects State-wide are being developed for programming, and delays may be anticipated. It is best to schedule deflection studies work year-round.

A follow-up pavement deflection study should be considered approximately one year prior to the submittal of the PS&E to ESC Office of Office Engineer (OOE). This follow-up deflection study will take into consideration any previous recommendations plus any additional pavement deterioration and other changes that have occurred since the previous study. Timely scheduling of this final deflection study will minimize delays in PS&E delivery. Interim deflection studies between the time of project scoping and the final deflection study should be avoided since they delay other projects. Similar to deflection studies required for project scoping, the final deflection study should be requested through the District Materials Unit.

### **Bridge Widening**

If bridges within the limits of RRR projects require widening or reconstruction, these bridges can be deferred from the RRR project, if necessary (i.e., to avoid delays in PS&E delivery due to environmental or right of way clearance problems, structure design time constraints, project cost increases, etc.). Deferral of any bridge work should be noted in the PSSR or Project Report. Such discussion is considered by FHWA to be a commitment by Caltrans that the work will be deferred from the RRR project, that the special priority number will be assigned, and that the bridge work will be completed as soon as the PS&E can be prepared and funds programmed. See the *Project Candidate List Development Manual* for special priority numbers.

Deferring bridge work to either widen or reconstruct existing structures should only be used as a last resort and is not acceptable purely for project cost containment. The



District should discuss all potential deferrals of bridge work that appear justified with the FHWA, the Programming Program, and the Engineering Service Center - Division of Structures, to assure that the deferred bridge work can be incorporated into the HA21 program. The PD Coordinator should be contacted to discuss all instances in which deferring bridge work is proposed, prior to PSSR or Project Report approval, since exceptions to Mandatory Design Standards are usually required. Once the approval to defer the bridge work is given, the District HA21 Program Advisor is responsible for assuring that the deferred bridge work is incorporated in the HA21 State-wide priority listing of candidate projects with a special priority number. A PSSR should be completed so that the work will be included in the State Highway Operation and Protection Program (SHOPP) at the time of next programming. Commitments will need to be monitored per the District's written monitoring procedure. Project Managers and Project Engineers are responsible for performing a thorough investigation to determine if prior commitments have been made as well as documenting new commitments.

### **Project Scoping Team**

A scoping team staffed at the discretion of the district will field review most HA21 projects and all HA22 major rehabilitation projects. (See PSR procedures for bridge replacement projects located on entirely new alignments.) The composition of the team will vary in accordance with the complexity of the project. As a minimum, a representative of METS, Pavement Consulting Services Branch, must be invited to review the proposed pavement rehabilitation strategy. A representative from the Maintenance Program Office of Roadway Maintenance should also be invited to ensure all proposed rehabilitation and upgrade work is within the HA22 Program guidelines. Early support by the HA22 Program Advisor for all aspects of a rehabilitation project will assure continuing support for the project throughout programming, funding, and construction. When appropriate, the ESC Project Functional Manager should also be invited, both for structure rehabilitation projects and for those pavement rehabilitation projects that affect structures.

The appropriate PSSR form (in Appendices G and P) should be used for the scoping process. The project engineer should complete the form during preliminary field reviews. The completed form must be furnished to each of the participants prior to the field review by the scoping team.

## **Design Exceptions**

One of DLP's responsibilities is to establish and ensure consistent application of highway design standards to ensure safe highways for the traveling public. Approval of exceptions to Mandatory Design Standards is the responsibility of DLP. This is accomplished via the "Exceptions to Mandatory Design Standard Fact Sheet" process (see Chapter 21 and Appendix BB).

Approval of exceptions to Mandatory Design Standards must be sought as early as possible in the project development process, especially where the project concept or cost estimate depend on the proposed design exceptions. As soon as nonstandard design features are identified, the DLP Geometric Reviewer or the PD Coordinator should be contacted to discuss the proposed nonstandard features. If an exception to a Mandatory Design Standard is required, approval must be obtained from the PD Coordinator prior to PSSR approval. The PSSR should include a reference to the "Exceptions to Mandatory Design Standards Fact Sheet", with approval date. All Nonstandard Advisory Design features are to be handled in accordance with each district's procedure.

The Fact Sheet is not to be attached to the PSSR. It is considered to be an independent document.

## **Safety Analysis**

All rehabilitation projects are to include a Safety Analysis. The analysis should be performed early in the project development process to identify safety problems that should be considered in development of the rehabilitation project. The analysis must include both an accident record review and a safety field review. The analysis is to be documented in a separate report. Typically, a fairly modern freeway meeting current standards requires a limited amount of analysis and data compared to an "unengineered" older rural highway or an older freeway or expressway that was developed when standards were different.

The date of the safety field review should be noted in the PSSR. The safety field review should be a joint effort between the district's Design Unit and Traffic Unit. The district Maintenance, Construction, Survey, and Safety Units must also provide safety reviews for the project, as specified in Chapter 8, Section 4.

The safety analyses should be conducted in a reasonable manner, consistent with the scope of the project and general condition of the existing facility.

### **Content of the Safety Analysis**

The Safety Analysis should address such items as:

- Pavement condition
- Existing geometrics
- Traffic volumes
- Accident data (typically the most recent 3-year accident history by type). Include an analysis of the causes of accidents (attach reduced copies of TASAS Selective Accident Retrieval).
- Traffic Safety devices and hardware
- Roadside obstructions
- Drainage features

- Structurally deficient or functionally obsolete bridges
- Other pertinent factors

### **Alternative Safety Solutions**

Where accident rates are high or there are concentrations, a determination should be made as to alternative improvements that can be accomplished within the parameters of a RRR project. This should be done using a multidisciplinary group to identify the problem and to brainstorm a solution.

The Safety Field Review report is not to be attached to the PSSR. The report should be briefly summarized under "Traffic Data" and should include proposals for safety enhancement. Safety enhancements not included in the project should be noted, with an explanation for their exclusion. The Safety Field Review report may make suggestions, but the decision to include them in the project will be the responsibility of the scoping team.

While the analysis may discuss a range of possible solutions to demonstrated problems, there should be no specific project recommendations made in the analysis. Project recommendations or proposals will be decided upon by the scoping team after considering whether the recommendation or proposal is consistent with the degree of the safety problem, is reasonable from a cost effectiveness standpoint, and is of the type that can be accomplished within the parameters of a RRR project.

### **Safety Upgrading**

Special emphasis should be placed on implementing cost-effective solutions recognizing, however, that certain upgradings for safety and operational purposes are desirable and others are necessary. Recommendations and decisions on safety improvements should be consistent with the degree of the safety problem and the reasonableness from a cost standpoint.

### **Maintenance Considerations**

Cost-effective maintenance improvements should be considered, as appropriate, particularly if they improve safety for maintenance operations. There may be low cost improvements that will provide significant safety benefits to maintenance personnel.

### **Documentation**

The Safety Analysis must be documented in writing and should be retained in the project file.

## **Project Approval**

The PSSR form, when completed and approved by the District Director, will serve as an approved PR when a Categorical Exemption/Exclusion Form or Final environmental

document is attached. Without these items, it functions as a PSR for programming purposes, and a supplemental PSSR will need to be completed once the environmental document is completed to approve the project for design.

Two copies of the approved PSSR are to be sent to DLP , Attention: PSSR. A third copy should be sent to the Program Advisor in Headquarters or in the ESC.

## ARTICLE 6 - Damage Assessment Form for Damage Restoration Projects

### Damage Assessment Report

The Damage Assessment Form (DAF) constitutes the project initiation document and the project approval document for federal and non-federal projects for the State Highway Operation and Protection Program (SHOPP). A PSR or a PR is only required when there are severe environmental impacts or an entirely new alignment is needed.

Projects eligible for Federal Emergency Management Agency (FEMA) Stafford Act relief have separate approval documents. Contact the headquarters HA23 Program Advisor in Headquarters Maintenance for instructions.

### Time Limits

Major damage restoration projects, regardless of fund source, are considered to be emergency-related high priority work. Project development for major damage restoration projects should be completed in a timely manner to ensure full federal eligibility.

For projects in the FHWA ER Program, project development work must be completed by the end of the second full federal fiscal year after the disaster. For these few projects eligible for the FEMA Stafford Act funding, construction must be completed within four years of the date of disaster declaration.

### FHWA Review

Federal participation for major damage restoration requires that the FHWA District Transportation Engineer review the major damage site as soon as possible after occurrence, in order to determine eligibility for ER participation. In the event of a finding of eligibility for the federal ER program, the FHWA will prepare a Damage Assessment Form for eligible work. Refer to Chapter 2, Section 7 and Figure 3, for level of FHWA oversight.

### Maintenance Function

Preparation of the DAF is the responsibility of the District Maintenance Unit, although Design personnel are members of the DAF team. For further information on DAF teams, emergency management, and Director's Orders, refer to the Major Damage Restoration

Coordinators Handbook, prepared by the Maintenance Program, Office of Roadway Maintenance.

### **Format for Damage Assessment Form**

The outline for the Site Damage Report is included in Appendix O.

## **ARTICLE 7 - PSR Data Sheet for Highway Planting and Highway Planting Restoration Projects**

### **PSR Data Sheet**

A PSR Data Sheet is required for all major unprogrammed candidate projects for the Highway Planting Restoration (HA25) and the Highway Planting (HB32) Programs and satisfies the requirement for a PSR. For a discussion on highway planting, refer to Chapter 29, Section 2, of this manual, and to Article 4 of that Section for further discussion of PSR Data Sheets.

### **Format for PSR Data Sheet**

Two separate PSR Data Sheets, one for the HA25 program and the other for the HB32 program, are included in Appendix E.

## **ARTICLE 8 - PSSR for Seismic Retrofit Projects**

### **Application**

An approved HA4S1, HA4S2 or HA4S3 Project Scope Summary Report (PSSR-Seismic) is required for all major unprogrammed Seismic Retrofit projects, as well as for project program priority rating. The Division of Structures (DOS) identifies individual structures based on a seismic rank algorithm, using factors relating to the site, seismic activity, structure design, route type, ADT, and detour length, among others. Individual structures are then grouped into projects. Refer to the Project Candidate List Development Manual for priority setting details.

### **Milestones**

Two formal milestones are unique to the Seismic Retrofit Program: (1) the Strategy Meeting, and (2) the Strategy Determination.

The Strategy Meeting is scheduled once the Division of Structures has reviewed a project and developed tentative retrofit strategies. Simultaneously, the district has

reviewed the project's bridges for traffic control, environmental type, right of way, replacement planting, erosion control and other concerns. During the Strategy Meeting, all involved parties review the project and work out proposed retrofit strategies that satisfy structural needs and minimize district concerns. Following a project's Strategy Meeting, project cost estimates (structures, district, right of way) are refined using the expected retrofit strategy, project schedules are established, and a draft PSSR is prepared.

Strategy Determination requires the Division of Structures and the district to work cooperatively to determine an acceptable solution to the retrofit problem. Upon final Strategy Determination, the draft PSSR is updated and circulated for signature. Once a PSSR has been approved, a project is programmed by State Highway Operation and Protection Program (SHOPP) Amendment from the fund reservations set aside for the capital costs of seismic retrofit.

### **Format for HA4S Letter-Type PSSR**

This PSSR has a letter format, in contrast to the fill-in-the-blank format of other PSSRs. The format for the PSSR-Seismic is included in Appendix N of this manual.

### **Bridge Rail Replacement Due to Seismic Retrofit Projects**

Non-current bridge rail replacement may be required on Interstate mainline and ramp structures in order to obtain approval of Federal funding for a seismic retrofit project. The rail replacement work may be included in the retrofit project or deferred for later programming in the SHOPP as an HA21 project. The District should discuss all potential deferrals of bridge rail work that appear justified with the FHWA, the Programming Program, and the Engineering Service Center - Division of Structures, to assure that the deferred bridge rail work can be incorporated into the HA21 program. The PD Coordinator should be contacted to discuss all instances in which deferring bridge rail work is proposed, prior to PSSR or Project Report approval. Once the approval to defer the bridge rail work is given, the District HA21 Program Advisor is responsible for assuring that the deferred bridge work is incorporated in the HA21 State-wide priority listing of candidate projects with a special priority number. A PSSR for Structure Rehabilitation Projects should be completed so that the work will be included in the SHOPP at the time of next programming. Commitments will need to be monitored per the District's written monitoring procedure. Project Managers and Project Engineers are responsible for performing a thorough investigation to determine if prior commitments have been made as well as documenting new commitments.

## ARTICLE 9 - NBSSR for Noise Barrier Retrofit Projects

### **Applicability**

The Noise Barrier Scope Summary Report (NBSSR) covers proposed improvements for the Community Noise Attenuation (Retrofit Noise Barrier) Program(HB311 projects). It may be used in lieu of a PSR to develop the scope, costs and related data. If a Draft environmental document (or properly signed Categorical Exemption/Exclusion) and the Noise Study are attached to the NBSSR, it may also serve as a PR. Otherwise, it replaces only the PSR, and a Supplemental NBSSR Report (or PR) will be required upon completion of the Noise Report and the environmental document. This Supplemental Report will describe any changes in the original concept as a result of completing the noise and environmental studies. Refer to Chapter 30 for Highway Traffic Noise Abatement policy.

### **Format for NBSSR**

The format for the NBSSR is included in Appendix F of this manual, along with instructions and comments identifying issues to be addressed during preparation of the NBSSR. These instructions supplement the information in Chapter 30 of this manual, as well as Chapter 1100 of the *Highway Design Manual*. See Chapter 20 of this manual for information on estimating procedures.

### **Basis of Noise Programs**

Section 215.5 and 215.6 of the Streets and Highways Code requires the priority ranking of the need for installing noise attenuation barriers along freeways and specifies the criteria to be considered. This is the basis for the HB311 program. Sections 216 and 216.1 of the Streets and Highways Code specifies the criteria to be used for control of freeway noise in school classrooms .

### **Funding**

Projects should be prepared in anticipation of federal funding for construction. Even locally funded projects are made eligible for federal reimbursement through Advance Construction procedures if a payback is anticipated.

### **Field Reviews**

A field review by district personnel is required to ensure that all needed items of work are considered and that an accurate assessment of the work is made. A review by the FHWA Transportation Engineer is desirable but not mandatory.

## **Hazardous Waste Considerations**

Since these projects are usually within existing right of way and around residential areas, hazardous waste locations are not normally a problem. However, proper investigation must be made. For example, a termination point near a neighborhood gas station could be subject to leaks from an underground tank.

## **Right of Way Considerations**

Property fences adjacent to the right of way may need to be removed or connected to the new noise barrier. If a noise barrier is to be constructed adjacent to the right of way line, construction easements may be required from the property owners. The materials to be used for constructing the noise barrier could require the need for construction easements. For instance, if precast panels were to be used, there would be considerable work required on the back side of the barrier to fill voids under the panels, to patch panels, etc. However, if masonry block were to be used there would be little need for construction work to be performed on the back side of the barrier. Since the noise barrier would be for the benefit of the property owner, there should be no direct payment involved in the acquisition; however, agreement must be reached and provisions must be made for disposition of existing fences, including cross connections to these existing fences. Offsetting the noise barrier slightly from the right of way line may eliminate the need for construction easements, but may create maintenance problems and the need for maintenance access to the back side of the noise barrier. Need for maintenance access must be considered for any noise barrier where State property would exist behind the barrier.

See Chapter 30 for a discussion of noise attenuation outside of state right of way.

In some jurisdictions, there may be a concern for access to fire hydrants located behind a noise barrier. Access gates for emergency personnel may have to be built into the noise barriers. Both of these facilities could impact right of way considerations. See Chapter 30 for further discussion regarding these types of facilities.

## **Safety Measures**

A safety shape concrete barrier is required if the noise barrier will be within 4.6 m of the edge of the traveled way (See *Highway Design Manual*, Index 1102.4). If widening is proposed in the near future, a safety shape concrete barrier should be considered for any noise barrier that would be within 4.6 m of the future edge of traveled way. Work may also be necessary to extend the existing paved shoulder to the concrete barrier and to remove intervening curbs.

## **Noise Barriers on Structures**

If the proposal includes placing a noise barrier on a structure, a number of associated facilities will often require upgrading as part of the project. This will most often involve upgrading the bridge railing, and will often require widening of the structure shoulder to provide standard horizontal clearance. Currently the only approved noise barrier design



alternatives on structures are masonry block and cast-in-place concrete panels. Other designs are being considered for possible adaptation to structures. The Headquarters Environmental Program should be contacted for current information on this subject.

## **Noise Barriers on Concrete Barriers**

If the noise barrier is to be placed on a safety-shape concrete barrier or retaining wall, currently the only approved alternatives are masonry block and pre-cast or cast-in-place concrete panels.

## **Foundation Considerations**

Sufficient investigation must be made to assure that the noise barriers can be placed on standard foundations. The Roadway Geotechnical Engineering Branch in HQ Office of Structural Foundations (OSF), of the Engineering Service Center (ESC) should be consulted for preliminary site information. Conditions such as high ground water, poor soil strength, steep slopes or other unusual ground conditions or physical obstructions may require special foundation design by the Division of Structures. The Materials Unit should be contacted for advice and assistance in obtaining preliminary site information from district sources and OSF.

## **Alternative Designs Required**

A minimum of two design alternatives for proposed noise barriers are to be included in each project unless an exception is granted. This exception may be approved at the District Division Chief level. A decision regarding the selection of possible materials or methods for abating the freeway noise should not be made until project details are known and input has been received from the affected public. Additional information on this subject is included in Chapter 30.

## **Value Analysis**

Value Analysis (VA) studies should be considered for all noise barriers. Chapter 19 includes general information regarding VA studies and Chapter 30 includes specific information relative to studies for noise barriers.

## **Design Standards**

Existing facilities that will be impacted by a noise barrier project should be reviewed for their compliance with design standards.

For example, a determination should be made concerning whether there will be standard horizontal and vertical clearance. If nonstandard features are identified in the existing facility, they should be discussed with the PD Coordinator or Geometric Reviewer. The proposal for the noise barrier project should include an improvement to these nonstandard features. Exceptions to this must be approved by the PD Coordinator prior to approval of the NBSSR, via a Fact Sheet for Exceptions to Mandatory Design Standards. Existing approvals for exceptions to Mandatory Design Standards need not

be repeated. The STRAIN report, the STIP, the SHOPP, and projects proposed by others should be reviewed to consider other contemplated work and the proper coordination with other proposed projects.

## **Design Considerations**

The following considerations have had significant impacts on past projects:

- Underground and overhead utilities should not be overlooked.
- Any drainage facilities disrupted by the proposed noise barrier(s) or their construction must be restored unless the need for the facility is eliminated by project design. Irrigation lines and planting must be given similar consideration.
- The Division of Structures must review any proposal which would require work on a bridge. They should also be consulted regarding special foundations or non-standard wall heights and for special details not shown on the standard plans.
- All projects will impact traffic to some extent and this becomes more critical for noise barriers proposed at shoulder locations. Sufficient consideration must be given to this to insure a feasible project. —Can lanes be closed? —Can a ramp be shut down? —Will additional costs be incurred because of working time limitations? —Are there other projects in the area which might have traffic management or control problems which would be aggravated by this project?
- Sight distance should be examined for noise barriers at shoulder locations [see *Highway Design Manual*, Index 1102.4(2)]. Location of roadside and overhead signs, lighting standards and ramp metering signals may become a concern, especially at ramps. Special care should be taken to verify that the proposed noise barrier will not block visibility to the signs or signals.
- Wall limits shown on the Noise Study are approximate. The actual limits should be determined based on field reviews, constructability, and consultation with the Environmental Unit.

## **Use of Plants for Noise Abatement**

Plants should be used as integral components in the development of all noise barriers. Their use is to be defined in the NBSSR and incorporated into the project development process. Chapter 30 provides additional details on this subject.

## **Transportation Management Plans**

Elaborate Transportation Management Plans are not normal for this type of project; however, if there are other major projects in the area, their Transportation Management Plans could impact this project and must be considered in the project details and costs.

## **Project Scope Review Process**

Headquarters Program Advisor review is not normally required. If a proposed HB311 Program project does not appear on the Priority List established May 3, 1989, it is unlikely that it could be programmed for funding until the Priority List is depleted. The specifics of the situation should be discussed with the Advisor.

# **ARTICLE 10 - PIR for Traffic System Management Plan Projects**

## **TSM Project Information Report**

The "Traffic Systems Management (TSM) Program Guidelines" are prepared by Caltrans and approved by the CTC in accordance with Section 164.1 of the Streets and Highways Code. The intent of the TSM program is to provide for effective traffic management systems in the major urbanized areas of the State within the level of funding provided by the legislature. Caltrans is required to submit to the CTC an annual TSM Plan which includes a priority list of capital projects submitted from local congestion management plans. A project may be proposed and implemented either by Caltrans or by a local public agency. The project must serve to manage traffic on a system of streets and highways identified by Caltrans and includes all freeways, expressways, and other principal arterials. For local agencies, all costs are eligible while for Caltrans only capital costs are eligible; capital outlay support costs for Caltrans are provided through the legislative budget process.

The TSM Guidelines provide that an agency proposing to implement a project with funding through the TSM plan should submit a TSM Project Information Report (PIR) to define the project scope, cost, and schedule and to assist Caltrans in developing the TSM plan. Refer to the TSM Guidelines for more detail.

Identical projects proposed for funding by funds other than TSM funds would not use the TSM Information Report for their project initiation document; they would use a PSR.

The primary difference between a PIR and a PSR is the report format, as well as the fact that PIRs are used for projects under local jurisdiction in addition to State highway work.

## **Format for TSM PIR**

The format for the Traffic Systems Management (TSM) Project Information Report (PIR) is included in Appendix J of this manual.

# **ARTICLE 11 - PSSR for Urban Freeway Off Pavement Access Projects**

## **Off Pavement Access Program (HA28)**

The HA28 program is a retrofit construction program. The goal of the HA28 program is to reduce the exposure of highway workers on foot to traffic on urban freeways (designated as a freeway with a current AADT of 175,000 or more vehicles) by providing off-pavement access for roadside maintenance activities. Funding will only be available for retrofit projects. New construction projects and ongoing construction projects should incorporate features that limit the highway worker exposure to traffic by providing off-pavement design concepts in their designs. As specified in Chapter 8, Section 4, Safety, Construction, Surveys, Traffic and Maintenance personnel are to be among the members of Project Development Teams (PDTs) for all projects to ensure that design features that limit the exposure of employees and the traveling public to traffic are appropriately considered on all projects.

## **Project Development Process**

In general, the project development process for major projects in the HA28 program is the same as the process used for the HA22 program.

A draft PSSR (using the HA28 format) is to be submitted to the Headquarters Program Advisor for review. The need for a field review will be evaluated by the Headquarters Program Advisor and scheduled as required. Approved PSSRs will be available for programming consideration. A priority list will be used to place those most critical major projects in the SHOPP. As many projects as funding levels allow will be placed in the SHOPP. As projects are completed new major projects will be amended into the SHOPP.

For major projects to be included in the SHOPP, approved PSSRs (see Appendix Q for format) are needed.

## **Types of Work**

Off pavement access improvements can consist of: installing gates in the access control fencing to provide access from outside of the right of way, providing trails for light duty vehicles, widening the pavement structural section outside of the edge of shoulder to provide maintenance pullouts at locations where access from outside of the right of way is not attainable, etc.

## Project Selection Criteria

Locations to be considered for inclusion in this program should require highway workers to be on foot and leave their vehicles. The location should require activity 4 to 6 times per year.

The primary consideration should be to remove the need for highway workers to be on the freeway right of way (i.e., removing landscaping from the roadside, gore areas, or narrow widths between active traffic lanes). If this is not feasible, relocating the maintainable highway feature (electrical pull boxes, irrigation controllers, etc.) to either protected or locations that minimize the highway workers exposure to traffic (i.e., as far away as possible from an active traffic lane). Once all other opportunities to eliminate or relocate the features requiring maintenance have been exhausted, off pavement access shall be considered. Off pavement access shall be considered in the following order:

1. Access openings from outside the right of way

These will consist predominately of either vehicular or pedestrian gates.

2. Longitudinal light duty vehicle access trails within the right of way

If access is not possible from outside of the right of way, access trails should be considered. The trails should be designed to accommodate typical maintenance vehicles used to perform the work at the location. These trails should not automatically be paved. The trails can be graded or constructed of an all weather surface. The choice of surfacing for the trail should depend upon the activities that are to be conducted at the site, the type of soil and the climate (wet, arid, dry, etc.).

3. Shoulder widenings/Maintenance vehicle pullouts

If all other options previously mentioned are not possible, the final consideration shall be to construct maintenance vehicle pullouts wide enough for the equipment that will be utilized at the site to be parked completely off of the shoulder of the freeway. The location of vehicle pullouts should be chosen such that it is coordinated with the work that is to be performed at the location and minimizes the exposure of the highway workers. Preference should be given to locations as far from the edge of shoulder as possible and then to locations that are shielded by fixed objects (i.e., bridge abutments, metal beam guard railing, concrete barriers, etc.). Protected pullouts that incorporate concrete barriers into the design should be considered at each location. Geometric design details for pullouts are to be determined on a site-by-site basis. *Standard Plan* H8 should be considered for use as appropriate. The geometric design shall be reviewed by either the Geometric Reviewer or the PD Coordinator to obtain their design concurrence and approval of any nonstandard mandatory design features proposed. The structural section for the pullout should be consistent with the shoulder structural section.

## ARTICLE 12 - Combined PSR/PR for Certain 100% Local-Funded Projects

### **Applicability**

The purpose of the Combined Project Study Report/Project Report (PSR/PR) is to streamline the project development process by providing for the preparation of a single engineering report for noncomplex, noncontroversial State highway projects that are funded by others and that cost over \$1,000,000 for construction. The Combined PSR/PR documents agreement on the scope and estimated cost. The Combined PSR/PR eliminates the separate processing of a PSR and should expedite project delivery. It constitutes project approval to proceed with design and as such serves as the Project Report. Although one report is prepared, it is expected that the report will address issues affecting operation, maintenance, and any potential tort liability on the State highway, and that the proposed work will conform to current Caltrans policies, practices, and standards.

A Permit Engineering Evaluation Report (PEER) is normally used for projects costing \$1,000,000 or less (see Article 13). However, for permit proposals that are too complex to be adequately documented in a PEER, the District may utilize the Combined PSR/PR format as a Project Report instead of a PEER.

Neither a Combined PSR/PR nor a PEER is required for utility and drainage encroachment work within the right of way. This work is handled by the normal encroachment permit process.

### **Format for Combined PSR / PR Report**

The format for a Combined PSR/PR is included in Appendix A of this manual.

### **Combined PSR / PR Usage Criteria**

A Combined PSR/PR may be used for projects funded by others if the project complies with the following criteria:

- Project is not capacity increasing (will not add through-mixed-flow lanes, other than short gap closures).
- Project qualifies as a Categorical Exemption (if Caltrans will be the Lead Agency for the CEQA).

- There must be only one “build” alternative.  
(OR  
The local agency is the Lead Agency for Environmental Clearance and has filed a Notice of Determination (NOD). )
- Exceptions to mandatory and advisory design standards shall be approved prior to approval of the Combined PSR/PR. Any nonstandard features identified after approval of the Combined PSR/PR shall be approved prior to approval of the contract plans by the State, and prior to issuance of the encroachment permit.
- No right of way acquisition by Caltrans or Relocation Assistance Program (RAP) involvement.
- No California Transportation Commission (CTC) approval required for route adoption or new public road connections to access controlled highways.
- Exceptions to Caltrans encroachment policy shall be approved prior to approval of the Combined PSR/PR.

Typically, "noncomplex, noncontroversial projects" will not involve new, non-dedicated right of way, hazardous waste, significant environmental impacts, public hearings for consideration of State highway improvements, non-standard maintenance agreement features, or tort liability concerns.

A Combined PSR/PR may generally be used for the following types of noncomplex, noncontroversial projects: channelization and restriping, widening, curbs and gutters, auxiliary and turning lanes, signal installation or modification, ramp modifications, landscaping, minor vertical and horizontal realignments, retaining walls, most interchange modifications, and overcrossings or undercrossings that are not part of an interchange.

## **Right of Way and Access Control**

If the proposed permit work involves dedication of additional right of way along the access control line – without any reduction in access restrictions – separate District Director concurrence is not needed. Involvement of the PD Coordinator or Geometric Reviewer should be sought when substantial modifications in the access control are proposed. Where access control is involved, the dedication shall specifically provide for access control, and right of way record maps shall be updated. A map or paper shifting of the access control line is not legally binding. The restriction must be contained in the deed or quit claim between local agencies and Caltrans. For changes in access control and disposal of right of way, refer to the Chapter 26 of this manual, entitled "Disposal of Rights of Way."

## **Combined PSR / PR Procedure**

Upon receiving the "Standard Encroachment Permit Application", the district's single point of contact (usually the District Permit Engineer) will verify that the project cost is more than \$1,000,000 or that it is otherwise not appropriate for processing as a PEER. A critical review of proposed PEER projects costing less than \$1,000,000 should be made to assure that PEER processing won't be nullified at a later date due to cost increases resulting from required scope changes, better estimates, or some other reason, or that PEER processing is not appropriate because the proposal is too complex.

Once verified, the district responsible unit assigned by the District Permit Engineer will be notified so that a Special Funded Project Coordinator (SFPC) can be assigned to coordinate the project approval. Communication between the SFPC, the District Permit Engineer, the applicant, and appropriate district functional units such as the environmental, structures and traffic units is essential to expedite this process.

A meeting of the applicant and all involved units should be held to determine the type of project approval and environmental documentation needed and to define roles and responsibilities.

The SFPC will provide a copy of the Combined PSR/PR outline to the applicant. The appropriate type of pre-approved cooperative or highway improvement agreement should be identified and given to the applicant for completion, execution, and submittal with the combined PSR/PR. The SFPC should document this meeting with a letter to the applicant. Once the applicant completes and submits the Combined PSR/PR, the SFPC should distribute the document for review by all involved Caltrans units.

The time needed to review and approve the Combined PSR/PR will depend on the completeness, scope, and complexity of the work. If a Combined PSR/PR is appropriate, the application is not considered complete until the approval of the PSR/PR. The responsible SFPC will notify the applicant of the expected completion date and whether additional information is needed.

The District Director (or designee) is responsible for the approval of the Combined PSR/PR. After approval, two copies of the final document should be forwarded to DLP, Attention: Project Report.

The approved Combined PSR/PR is the authorization to enter into a preapproved cooperative or highway improvement agreement for the design and construction of the State highway. Refer to the Cooperative Agreement Manual for the appropriate preapproved document.



## ARTICLE 13 - PEER for Encroachment Permit Projects

### Choosing the Correct Report

A Project Study Report (PSR) is not required if a State highway improvement to be funded by others has an escalated construction cost of \$1,000,000 or less for projects where the local entity or a developer undertakes preliminary and construction engineering via the encroachment permit process. Instead, a Permit Engineering Evaluation Report (PEER), or occasionally a Combined PSR/PR or Project Report (PR), should be prepared. The following paragraphs describe the PEER and provide criteria for determining when a PEER would be applicable for encroachment permit projects.

### Format & Purpose for PEER

The format for a PEER is included in the *Encroachment Permits Manual* and in Appendix I of this manual.

The purpose of the PEER is to document the engineering analysis of permit actions that affect operation, maintenance, or tort liability of the State highway. Such work should conform to current policies and standards, and exceptions should be justified. While the PEER serves as the State's project initiation document, its approval also provides project approval.

The PEER melds engineering review of permit proposals into the normal encroachment permit application review to eliminate any separate processing of a PR. The responsible unit for PEER preparation will usually be Design or Traffic Operations, depending upon type of work. Other district units involved, such as Environmental, Right of Way, Utilities, Maintenance, etc., will review the permit application as appropriate. There will be no involvement by them in the PEER unless requested by the responsible unit.

### Applicability

#### **For Projects Less Than \$1,000,000**

The procedures for PEER preparation apply to projects involving work on State highways by others, costing \$1,000,000 or less, except as indicated in the following paragraphs, or where a Combined PSR/PR or a Project Report may be more appropriate as noted in Article 12. Projects costing over \$1,000,000 are considered "State highway improvements funded by others". As such, they must be covered by a Project Study Report, or if they meet the criteria, by a Combined PSR/PR. (Refer to Article 12.) The dollar limit referred to above represents the estimated value of permit work improvements within the existing State highway right of way and any right of way dedication to be made by the permittee (dollar limit does not include value of any dedicated right of way).

### **Not for Routine Utility or Drainage Work**

The PEER process does not apply to routine utility and drainage work which is generally installed laterally and sometimes longitudinally within the right of way. Routine utility and drainage work can be handled by the normal encroachment permit process even if the work costs more than \$1,000,000.

### **Not used for New Public Road Connections**

The PEER process cannot be used for a project that requires new public road connections to a freeway or expressway or other FHWA or CTC approval. Usually both FHWA and CTC approvals are required, and a separate PR (or New Connection Report for expressways) should be prepared.

## **Right of Way and Access Control**

### **Conventional Highway Right of Way**

Usually, the permit work is contained within the existing State highway right of way. Where new signalization, channelization, widening, etc., are involved, it is sometimes necessary for the permittee to dedicate additional right of way to Caltrans. These cases most often occur on conventional highways and pose no unusual problems.

### **Freeway Right of Way**

Where access control is involved on freeways and expressways, dedications and changes in access control pose special procedural problems. These situations most often occur at freeway ramp terminals where widening or signalization is proposed or new development is planned.

### **Access Control Change Procedures**

If the permit proposal involves a reduction in access control or transfer of Caltrans right of way to the permittee, a request must first be made to the District Director for authorization to decertify and dispose (sell) the property rights involved. See Chapter 26, "Disposal of Rights of Way", for processing instructions. This work is normally done during preliminary negotiations with the permit applicant before the applicant formally submits the permit to the State. For proposals on the Interstate System, the district must obtain any necessary FHWA approvals. After approval is received, the right of way transaction is consummated and the encroachment permit is processed. The permit work would be covered by a PEER as applicable.

### **Right of Way Dedication Procedures**

If the permit work involves dedication of additional rights of way along the access control line without any reduction in access restrictions, separate District Director concurrence is not needed. The involvement of PD Coordinators and Geometric Reviewers should be sought when substantial modifications to access control position are proposed. In all cases, it is important that the dedication specifically provide for

access control and that right of way record maps be updated. A map or paper shifting of the access control line is not legally binding — the restriction must be contained in the deed or quit claim.

## **Step-by-Step PEER Procedures**

### **District Permit Engineer Initiates Procedure**

Upon receiving the permit application, the District Permit Engineer will determine if the project is likely to require a PEER. If so, or if the Permit Engineer otherwise determines a need, the Permit Engineer will use the Encroachment Permit Application Review Form (TR0110) to designate a responsible unit (Design, Traffic Operations, etc.) for possible PEER preparation. The Permit Engineer will request that unit and other involved district units to review the application. See Article 11 for possible processing as a Combined PSR/PR if the cost is over \$300,000; however any charges will still be accounted for utilizing the encroachment permit EA if the project cost does not exceed \$1 million.

### **Determining if a PEER Is Required**

The responsible district unit will review and determine whether or not a PEER is required. If the unit determines that there will be no adverse impact on highway operations, maintenance, and tort liability, it must indicate so in the appropriate box shown on the Encroachment Permit Application Review Form with the signature by at least a senior level person. The unit will then do its usual permit review, fill out the rest of the form, and return it to the Permit Engineer. If there will be impacts, a PEER is required and the unit will be responsible for the preparation, review, and approval of the PEER. (See Appendix I.)

### **Evaluate Impacts on State Highway**

The responsible unit will evaluate the impacts of the permit proposal upon the State highway, determine its geometric and functional adequacy, and summarize the findings in a PEER, which should contain the information needed to justify (or reject) the proposed work.

As a general rule, a PEER should be prepared when the traffic or other actions generated by the permittee adversely affect operation and/or maintenance of the highway or there is potential to expose Caltrans to tort liability suits. The primary purpose of the PEER is to document the engineering rationale for Caltrans' decision in a permit action.

A PEER should always be prepared when new operating improvements are constructed by the permittee that become part of the State highway. These include signalization, channelization, left-turn pockets, widening, realignment, public road connections, and bike paths and lanes. Commercial road approaches would not usually require a PEER when grades are flat and there are no sight distance restrictions; otherwise one should be prepared. Widening by adding lanes should be covered by a PEER unless part of a precise plan for the highway adopted by the local agency and previously concurred in by Caltrans.

Drainage work by a permittee should have a PEER if there is potential for tort liability due to changes in upstream or downstream conditions as a result of the construction. Landscape with grading that affects sight distance or clear zones should have a PEER. Daylighting of cuts or other major grading within the right of way would not usually require a PEER unless sight distance or safety factors were less in the after condition.

### **Preparation Timing**

The time needed to evaluate and finalize the PEER will depend on the scope and complexity of the work. When it can be done within the review deadline (normally back to the Permit Engineer within 10 working days of submittal), the PEER should be attached to the Encroachment Permit Application Review form and returned to the Permit Engineer. When more time is needed, the Encroachment Permit Application Review form should be returned immediately to the Permit Engineer, with notification of the estimated date that the PEER will be completed and whether or not additional information is needed.

### **Nonstandard Feature Approval**

If Nonstandard Design features are involved, the procedure outlined in Chapter 21 of this manual should be followed. An exception to a mandatory standard will require preparation of a Fact Sheet by the unit responsible for PEER preparation and approval by the PD Coordinator.

### **CEQA / Traffic Mitigation**

On more complex permit proposals involving CEQA and traffic mitigation approvals by a local agency, it is expected that the responsible unit would have been involved in preliminary negotiations prior to final PEER preparation. If this has not been done, the permittee should be called for an immediate meeting to resolve these issues. In addition, it may be appropriate to require a Combined PSR/PR or a full PR, but not if the cost is \$300,000 or less.

### **All Permit Proposals Need Evaluation**

The fact that a PEER is not prepared does not in any way diminish the responsibility of the District Responsible Unit to thoroughly evaluate the permit proposal and summarize conclusions in the "Remarks" area of the Encroachment Permit Application Review form (TR0110).

## **Approval**

The District Director (or designee) is responsible for approval of the PEER. One copy of the approved PEER is to be sent to DLP, Attention: Project Report.

## **Permit Review Charges**

PEER preparation is considered part of the permit review process, with costs to be charged to the Expenditure Authorization (EA) assigned by the District Permit Engineer. Charges should be reasonable. Excessive hours should be charged to the unit's overhead EA. Prior staff work not directly associated with actual permit processing or PEER preparation, even though later constructed by permit, should be charged to the unit's overhead EA, and not to the permit review EA.

## **ARTICLE 14 - Director's Order for Urgent Projects**

### **Initiated by Memo -- Approved by District Director**

Projects addressing an urgent need to protect the health and safety of the traveling public (e.g., correcting an imminent bridge or roadway failure) require a Director's Order to let an emergency contract or use day labor. A Director's Order should be requested by a memorandum that is signed by the District Director and submitted to the Program Manager, Maintenance Program. One copy of the memorandum request should be sent to DLP, Attention: Project Report, for information. The request should contain the information in the following list.

Note: These procedures do not pertain to Major Damage Restoration projects that do not qualify as emergency contracts.

- District, County, Route, Post Kilometer
- Statement addressing the nature and cause of the damage or failure
- Background information (history of problem, work already performed)
- Proposed work
- Proposed work method (force account, equipment rental, informal bids, or day labor)
- Statement of cost and source of funding (HA23, Maintenance HM-6, etc.)
- A statement that necessary clearances (right of way, Department of Fish & Game, etc.) have been obtained
- Proposed schedule (PS&E submittal, Advertising, Bid Opening, etc.)
- Name and telephone number of district contact person

Refer to the *Major Damage Restoration Coordinator's Handbook* for further information.

## ARTICLE 15 - EA Project Report for "Minor B" and Maintenance Projects

### Use "EA" Project Report

For very simple projects that fall under the dollar limit for "Minor B" projects, the completed Expenditure Authorization Project Report (EA-PR) serves as the project initiation document and the PR. See Appendix B for the EA-PR.

### Maintenance Projects

For maintenance projects, the completed EA-PR serves as the project initiation document and the PR. See Appendix B for the EA-PR.

### Traffic Signal Projects

Although "Minor B" projects normally are not required to have formal project reports, the *Traffic Manual*, Section 9-02.2, specifically requires "a project report of the investigation of conditions at locations where a new traffic signal is to be installed, an existing traffic signal is to be modified or an existing traffic is to be removed".

A written summary of the investigation and justification for the installation, modification or removal of a traffic signal is required when any portion of the intersection is within the State highway system. The purpose of this written report is to provide the technical justification for the traffic signal work and may be an abbreviated report in a cover letter format instead of a formal project report.

The minimal cover letter format should state the location and investigative background and list the investigating party. The district may establish its own level of approval authority indicating the professional engineer in responsible charge of the work.

Attachments to the cover letter should include the same technical attachments used for traffic signal project reports. These include:

- Warrant sheets showing the various traffic counts made during the investigation and to what degree Warrants 1 through 11 have been met.
- A collision diagram covering, at a minimum, the most recent three-year history. If Warrant 6-Accident History is satisfied, the accidents applicable to that warrant should be indicated.

- A condition and improvement diagram as described in Section 9-02.2 of the *Traffic Manual*.
- An estimate of cost and the funding proposed by the district including contributions by others.

Traffic signal projects that include restriping or other geometric changes which introduce nonstandard conditions such as lane widths, shoulder widths, disabled access, etc. will require approval of Fact Sheets for nonstandard features even though the project report is reduced to this cover letter format. The DLP Coordinator or Geometric Reviewer must be consulted for nonstandard features.

This cover letter format, written report must be maintained on file as a part of the historical background of that portion of the State highway system within the district's jurisdiction.

## ARTICLE 16 - CAPM Project Report for Capital Preventive Maintenance Projects

### CAPM Project Reports

A Capital Preventive Maintenance Project Report (CAPM PR) is used to define project scope, cost, and approve work proposed as capital preventive maintenance. The completed CAPM PR serves as the project initiation document and the PR (see Appendix H for details on the CAPM PR). The CAPM PR is used to select candidate projects for the State Highway Operation and Protection Program (SHOPP). For more information on the SHOPP, see Chapter 4 of this manual.

### Purpose of CAPM Projects

CAPM projects are capital outlay projects in the HA22 Program that conform to the Streets and Highways Code (Section 27) definition of maintenance:

"The preservation and keeping of rights-of-way, and each type of roadway, structure, safety convenience or device, planting, illumination equipment, and other facility, in the safe and usable condition to which it has been improved or constructed, but does not include reconstruction or other improvement."

CAPM projects, being in the HA22 Program, are pavement structural section preventive maintenance projects. CAPM projects typically include such items as placement of additional surface material, grinding pavement surfaces, and/or other pavement structural section related work necessary to preserve the existing roadway. CAPM projects are not to include upgrading of geometric features and appurtenances for safety purposes and will not degrade the existing geometric design and safety features to below those which currently exist. All newly constructed project features are to be in conformance with current design and safety standards, policies and practices. CAPM projects which are

consistent with the scope and intent of the CAPM program do not require an "Exceptions from Mandatory Design Standards Fact Sheet".

## **Project Selection**

CAPM projects are to be selected purely to preserve the pavement structural section by utilizing capital preventive maintenance strategies. A preliminary project field review should be performed by the district. The District HA22 Program Coordinator will then select projects for the candidate list and initiate CAPM PRs in conformance with CAPM project guidance from the HQ Program Advisor in the Maintenance Program.

The District Design Unit, with assistance from the Maintenance and Materials Units, should jointly do the scoping and estimating for the selected projects. When the CAPM PR process is initiated, a K-phase Expenditure Authorization should be secured in the same manner as PSRs.

## **Project Scoping**

Capital preventive maintenance strategies (strategies that extend pavement service life for a minimum of five years) may involve such types of work as: grinding or removal of concrete slabs; "thick blanket" asphalt concrete overlays; etc. Surface treatments (seal coats) and "thin blanket" asphalt concrete overlays are not capital preventive maintenance strategies.

### **Field Reviews and Documentation**

It is necessary to field review all CAPM projects. All project field reviews must be documented since the project personnel may change. Decisions and agreements made during the early phases of the project development process need to be documented and retained in the project files for future reference. Field reviews of all CAPM projects are also needed so that a reliable project scope and cost estimate can be developed and then programmed.

### **Reliable Project Scope and Cost Estimates**

To minimize future cost increases, a thorough scoping of projects and reliable project cost estimates are needed. Reliable project cost estimates are extremely important at every stage in the project development process. Inaccurate estimates result in severe problems in Caltrans' programming and budgeting. The final concept, scope, and cost of each project must be established as early as possible. Initial estimates made for CAPM projects should be based on the results of field reviews and include all anticipated work.

### **District Environmental Unit Involvement**

The type of work performed by CAPM projects typically will not extend outside of previously paved surfaces and will not involve excavation beneath ground surfaces previously disturbed by highway construction. Because of the nature of the work, CAPM projects normally meet the categorical exemption class requirements of CEQA. The District, to effectively utilize the CAPM program, should make the categorical



exemption determination for CAPM projects on a districtwide (group) basis similar to that which is used for other highway maintenance work. The District Environmental Unit needs to be consulted to make the categorical exemption determination for this group of projects. At the same time that the group categorical exemption determination is made, the District Environmental Unit will ascertain that criteria of the FHWA Programmatic Categorical Exclusion (NEPA) apply to this group of CAPM projects. In the rare case that a CAPM project does not fit into the overall project group analysis because it includes a "special" project feature, the categorical exemption/exclusion determination is to be made separately. See the *Environmental Handbook* for further details.

### **District Right of Way Branch Involvement**

Approval of a CAPM PR typically will not involve the District Right of Way Branch. CAPM projects by their scope and intent will not extend outside of the state-owned right of way. For that reason, attaching a Right of Way Data Sheet and a signed statement by the District Division Chief of Right of Way are not CAPM PR requirements.

Some CAPM projects will, however, require involvement with the District Right of Way Branch. A Railroad Agreement will be required if an at-grade or separated-grade crossing is part of the project. Utility relocations are not within the scope and intent of CAPM projects. If utility relocation work is required, the project does not qualify for the CAPM program and should be programmed as a resurfacing, restoration, and rehabilitation (RRR) project in the HA22 Program.

### **Deflection Studies**

Deflection studies are required as part of the AC (flexible) pavement rehabilitation design procedure and must be completed prior to the scoping team's field review for all AC pavement CAPM projects. For proper project scoping and cost estimating purposes, the deflection study should be no older than one and one-half years.

Deflection studies should be scheduled through the District Materials Unit. This Unit will then coordinate the required testing with the Pavement Consulting Services Branch, of the Office of Materials Engineering and Testing Services (METS), of the Engineering Service Center (ESC). Early submittals are encouraged since testing may take as long as four to six months to accomplish, depending on the availability of test equipment and time of year. Near the end of the fiscal year (June 30) many projects statewide are being developed for programming, and delays may be anticipated. It is best to schedule deflection studies work year-round.

A follow-up pavement deflection study should be considered approximately one year prior to the submittal of the PS&E to the ESC Office of Office Engineer (OOE). This follow-up deflection study will take into consideration any previous recommendations plus any additional pavement deterioration and other changes that have occurred since the previous study. Timely scheduling of this final deflection study will minimize delays in PS&E delivery. Interim deflection studies between the time of project scoping and the final deflection study should be avoided since they delay other projects. Similar to

deflection studies required for project scoping, the final deflection study should be requested through the District Materials Unit.

### **Project Scoping Team**

A scoping team staffed at the discretion of the district will field review most CAPM projects. The composition of the team will vary in accordance with the complexity of the project. As a minimum, a representative of the ESC-METS Pavement Consulting Services Branch must be invited to review the proposed CAPM project. A representative from the Maintenance Program, Office of Roadway Maintenance, should also be invited to ensure all work is within CAPM program guidelines. Early support by the HA22 Program Advisor for the CAPM project will assure continuing support for the project throughout programming, funding, and construction.

The CAPM PR form (in Appendix H) should be used for the scoping process. The project engineer should complete the form during preliminary field reviews. The completed form must be furnished to each of the participants prior to the field review by the scoping team.

### **Project Approval**

The CAPM PR form, when completed and approved by the District Director, will serve as the project initiation document and also the project approval document.

Two copies of the approved CAPM PR are to be sent to the DLP Program Manager, Attention: PSSR. A third copy should be sent to the Headquarters Program Advisor in the Maintenance Program.

## **ARTICLE 17 - Project Report for "Minor A" Projects**

### **Use Project Report**

Projects in the "Minor A" Program do not require a PSR. Therefore, the PR is the project initiation document. See Appendix K for an outline and preparation guidelines. Refer to the *Traffic Manual*, Sections 1-05.3 and 9-02.2 for additional requirements for traffic signal project reports.

## ARTICLE 18 - Combining Project Development Documents

### Conditions

Note: This procedure is not to be confused with the Combined PSR/PR discussed in Article 12.

In rare cases and under certain conditions, it is possible to combine two required project development reports into a consolidated document. The Project Report/Project Study Report consolidation is such an example. The document should include the information necessary to enter the project into the programming document (normal PSR) and also provide the detail required to make the engineering decisions (normal PR). This situation usually occurs on local projects prepared by a consultant and is done on a risk taking basis, risking that the concept will be approved and that the additional work done beyond that required for PSR approval will not be wasted. A consolidated report may also be employed on State-funded projects if the work needed for PR approval is all required for —and accomplished during— PSR preparation.

### Criteria

Projects using this process normally would meet the following criteria:

- All technical information required for normal PSR processing must be identified and included in the PR/PSR.
- Project priority must be high enough to ensure entry into a programming document.

### Format

No special format is used for projects in this category. The normal PR format would be followed, modified as needed to include any information that is required for a PSR.

## ARTICLE 19 - Ceasing Work on Programmed Projects

### The Request Process

District requests for approval to cease work on programmed projects should be submitted by a memorandum to DOT-Programming. The memorandum should explain the factors warranting deletion of the project and should state what resources (PYs and dollars) will

be made available by deletion of the project. For programmed projects in the Compatibility Improvements (HB3), System Operation Improvements (HB4), and New Highway Construction (HE) Programs, the memorandum should indicate if the deletion has the concurrence of local and regional agencies.

Note: This process was commonly known as the UNPAR process, derived from the Project Authorization Request (PAR), which is a report format that has been discontinued.

## **Approval Process**

Before the request can be approved, the Headquarters Program Advisors for the appropriate program must review and approve the district's memorandum.

The Headquarters Program Advisors, in cooperation with the Programming Program, may also initiate deletion of programmed projects (e.g., change in program priority).

## **Cease Work at Agreed Milestone**

The Programming Program will notify the Program Managers of DLP, the Budgets Program, the Administrative Service Center, and the district of the action taken. Project activities will cease at an agreed-upon milestone.